

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
4 September 2008 (04.09.2008)

PCT

(10) International Publication Number  
**WO 2008/106254 A3**

(51) International Patent Classification:

A61F 2/30 (2006.01) A61L 27/36 (2006.01)  
A61F 2/28 (2006.01)

(21) International Application Number:

PCT/US2008/051796

(22) International Filing Date: 23 January 2008 (23.01.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/657,042 24 January 2007 (24.01.2007) US

(71) Applicant (for all designated States except US): MUSCULOSKELETAL TRANSPLANT FOUNDATION [US/US]; Edison Corporate Center, Suite 300, 125 May Street, Edison, NJ 08837 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SEMLER, Eric, J. [US/US]; 117 Orion Road, Piscataway, NJ 08854 (US). TRUNCALE, Katherine, G. [US/US]; 4 Riverview Terrace, Hillsborough, NJ 08844 (US). CALLAHAN, Alex, B. [US/US]; Apartment 26, 1050 Florida Grove Road, Perth Amboy, NJ 08861 (US). YANNARIELLO-BROWN, Judith, I. [US/US]; 79 Drake Road, Somerset, NJ 08873 (US).

(74) Agent: KIM, John, K.; Greenberg Traurig, LLP, 200 Park Avenue, P.O. Box 677, Florham Park, NJ 07932-0677 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
30 July 2009

(54) Title: TWO PIECE CANCELLOUS CONSTRUCT FOR CARTILAGE REPAIR

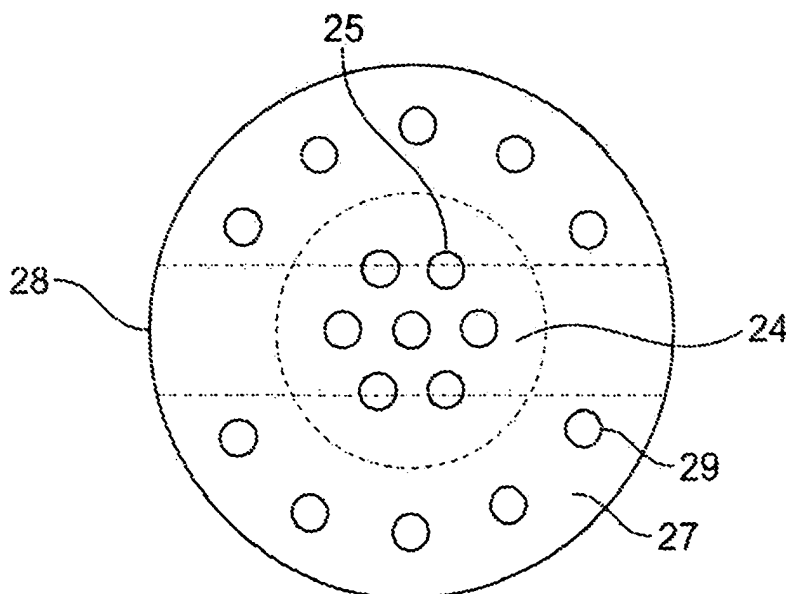


Fig. 4

(57) Abstract: The invention is directed toward a cartilage repair assembly comprising a shaped allograft two piece construct (20) with a demineralized cancellous cap (30) and a mineralized cylindrical base member (22) defining a blind bore (23) with a through going transverse bore (28) intersecting the blind bore (23). The demineralized cancellous cap (30) has a cylindrical top portion (32) and a smaller diameter cylindrical stem (36) extending away from the top portion (32) which fits into the blind bore (23) of the mineralized base member (22). The cap stem (36) defines a transverse through going bore (37) which is aligned with the through going bore (28) of the base member (22) to receive a cylindrical cortical pin (40) holding the cap (30) within the base member (22). The shaped structure (20) is dimensioned to fit in a drilled bore in a cartilage defect area so that the assembly engages the side wall of the drilled bore in an interference fit.

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/051796

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61F2/30 A61F2/28 A61L27/36

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 627 853 A (CAMPBELL) 9 December 1986 (1986-12-09)	1
Y	column 1, lines 33-44 column 5, line 53 - column 6, line 42; claims 1,10; figures 1,2	2-24
Y	US 2005/209705 A1 (NIEDERAUER) 22 September 2005 (2005-09-22) paragraphs [0044], [0049], [0050]; claims 2,4; figures 4A,4B,7A-8	2-24
Y	US 6 306 174 B1 (GIE) 23 October 2001 (2001-10-23) column 6, lines 25-34; figure 16	2-24
	-/-	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

12 June 2009

Date of mailing of the international search report

23/06/2009

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax (+31-70) 340-3016

Authorized officer

Klein, Christophe

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/051796

## C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004/102850 A1 (SHEPARD) 27 May 2004 (2004-05-27) paragraph [0042]; claim 2 -----	1
A	US 2006/235534 A1 (GERTZMAN) 19 October 2006 (2006-10-19)  claims 1,3,5,15,19 -----	1,2,10, 16,17, 19-21,23
A	US 6 294 187 B1 (BOYCE) 25 September 2001 (2001-09-25) cited in the application claims 36,37,39,58,59,93; figure 1a -----	1,5,9, 16,20,23
A	US 2002/120274 A1 (OVERAKER) 29 August 2002 (2002-08-29) paragraphs [0018], [0019], [0021]; figures 4,6 -----	2,3,6,8, 18-20,22
A	US 2004/193268 A1 (HAZEBROUCK) 30 September 2004 (2004-09-30) paragraph [0051]; figures 7-16,27,28 -----	12,19
A	US 2004/230303 A1 (GOMES) 18 November 2004 (2004-11-18) claims 1,11,14,15 -----	15,16,23
A	US 6 454 811 B1 (SHERWOOD) 24 September 2002 (2002-09-24) column 1, line 34 - column 2, line 2 -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/051796

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4627853	A	09-12-1986	CA 1298935 C DE 3617897 A1 FR 2582517 A1 GB 2175506 A JP 62032965 A	21-04-1992 04-12-1986 05-12-1986 03-12-1986 12-02-1987
US 2005209705	A1	22-09-2005	AU 2005221083 A1 CA 2555586 A1 EP 1737506 A2 JP 2007537778 T WO 2005086849 A2	22-09-2005 22-09-2005 03-01-2007 27-12-2007 22-09-2005
US 6306174	B1	23-10-2001	NONE	
US 2004102850	A1	27-05-2004	NONE	
US 2006235534	A1	19-10-2006	WO 2006113586 A2	26-10-2006
US 6294187	B1	25-09-2001	AU 758828 B2 AU 3703300 A CA 2363153 A1 DE 60027698 T2 EP 1152777 A1 ES 2261191 T3 JP 2002537073 T TR 200102480 T2 WO 0050102 A1 US 2001043940 A1	03-04-2003 14-09-2000 31-08-2000 26-04-2007 14-11-2001 16-11-2006 05-11-2002 21-12-2001 31-08-2000 22-11-2001
US 2002120274	A1	29-08-2002	AT 353199 T AU 784999 B2 AU 1560302 A CA 2372713 A1 DE 60217981 T2 EP 1234555 A2 ES 2279853 T3 JP 4215988 B2 JP 2002291758 A	15-02-2007 17-08-2006 29-08-2002 26-08-2002 15-11-2007 28-08-2002 01-09-2007 28-01-2009 08-10-2002
US 2004193268	A1	30-09-2004	AT 356596 T AU 2004201204 A1 DE 602004005259 T2 EP 1477140 A2 US 2005107794 A1	15-04-2007 21-10-2004 28-06-2007 17-11-2004 19-05-2005
US 2004230303	A1	18-11-2004	US 2009069901 A1 WO 2004103224 A1	12-03-2009 02-12-2004
US 6454811	B1	24-09-2002	US 2003114936 A1	19-06-2003